fourth of the ultimate strength of the steel used in construction. The steel used in compression will be considerably stronger and harder than the more ductile material used for the parts in tension.

Facility of erection has necessarily been one of the most important governing elements in the design of the Forth Bridge. With 200 feet depth of water, scaffolding is of course out of the question, and the only practicable way of erecting the great girders is by commencing the work at each pier and adding successive bays of struts, ties, and bracing on either side, until the whole structure is complete. This mode of erection, technically known as "erection by overhang," is that which has been successfully adopted in the two largest railway bridges yet constructed, namely, the St. Louis Bridge across the Mississippi, of 525 feet span, and the Douro Bridge, of the same span, near Lisbon. The great advantage and security of erection by overhang in a case like the Forth Bridge is that every piece of the work is finished and securely braced against storms before another length is commenced. When the bridge is partially finished it will at the distance present much the appearance of three huge birds perched with outspread wings on as many rocks. The distance between the tips of the wings will be represented by that between the ends of the cantilevers, or say, 1500 feet. It might be thought that this would be a critical stage of the erection, but it is not so, as the work is so designed that if a hurricane of 56 lbs. per square foot were to strike one wing whilst the other remained becalmed the cantilevers would not spin round like a weathercock, but remain perfectly stable and secure.

We understand that the Board of Trade have signified their approval of the design and of the provisions made by the engineers as regards strains and wind pressures.

NOTES

THE last work of the late Mr. H. C. Watson on the distribution of British plants was his "Topographical Botany," published in 1873-4, in which he traced the dispersion of each species through the 112 vice-counties of Britain which he adopted. Of this book only 100 copies were printed for private circulation, and these were all given away by the author immediately. Since its issue a large amount of new material has been accumulated, principally through the exertions of the members of the Botanical Record Club, and at the time of his death, last autumn, Mr. Watson was engaged in the preparation of a new edition. This he did not live to complete as regards its prefatory and explanatory portions, but he had kept an interleaved copy in which he regularly entered up every record of any plant in a new district that was brought to his notice. At his own special request this was deposited with his herbarium at Kew, and from this it is now proposed to prepare a second edition of the book, which Mr. Quaritch has undertaken to publish, and Mr. J. G. Baker, of the Royal Gardens, and the Rev. W. W. Newbould to make ready for the press.

THE New York *Nation* announces the death of Mr. Lewis H. Morgan at Rochester, N.Y., on December 17, after a brief illness following a long period of delicate health. "With reference to our pre-Columbian antiquities," the *Nation* states, "he might for some time past have been called the Nestor of Indian ethnologists. A native of Western New York, he early became interested in the neighbouring remnant of the once mighty Six Nations, and gained a thorough insight into the political and military constitution of the Confederacy, its manners and customs, and above all its curious system of tribal intermarriages. Together with some kindred inquiring spirits he instituted, at the age of twenty-five, an Order, or 'New Confederacy' of the Iroquois—a sort of antiquarian society, having as a subsidiary aim the promotion of a kindlier feeling toward the red man; and before its 'councils' in the years 1844, 5, and 6, he read a number of papers on the Iroquois, which, under the *nom de plume* of 'Skenandoah,' were published, as letters addressed to Albert Gallatin, in Cotton's *American Quarterly Review*, in 1847. From this source they were reprinted by Neville B. Craig, of Pittsburgh, in his monthly *Olden Time* (1848), and five years ago once more saw the light in Robert Clarke and Co.'s reprint of the latter periodical. This work at once put Mr. Morgan in the front rank of Indian authorities. A professional visit to Lake Superior led him to observe an animal closely associated with the aborigines, and toward the close of 1867 he produced the 'American Beaver and his Works,' an exhaustive but highly readable monograph, in which, to use the words of the late Jeffries Wyman (*Nation*, February 27, 1868), Mr. Morgan, 'with a zeal and patience worthy of Réaumur, the Hubers, or of Darwin, re-examined the whole subject and largely increased our knowledge,' and which 'justly entitled him to an honourable place in the higher ranks of original observers.' The year following, in an article on the 'Seven Cities of Cibola,' in the *North American Review* (April, 1869), he struck a blow at the whole fabric of the theory of Indian civilisation handed down by the Spaniards and embalmed by Prescott, and laid the foundations of the prevailing conception of the meaning of that communal architecture which was for centuries regarded as royal and palatial. In 1873 appeared among the Smithsonian Institution's Contributions to Science a quarto volume of 700 pages, entitled 'Systems of Consanguinity and Affinity of the Human Family.' This was the first fruit of Mr. Morgan's discovery, while on his excursion to Lake Superior, that the system of marriage and relationship in the Six Nations was that of the American Indians generally, and his subsequent reflection that he had encountered a fundamental fact in the development of human society. He afterward resumed the whole question in a popular manner in his 'Ancient Society; or, Researches in the Line of Human Progress of Savagery through Barbarism into Civilisation.' His last work was among the pueblos of New Mexico, from the study of which he concluded that the Mound-builders were village Indians of New Mexican origin, and that the mounds were the platforms for their long wooden communal houses. These conclusions were published in the first report of the Archæological Institute of America (1880). On his death-bed he received his very latest printed work, 'Houses and House Life of the American Aborigines,' published by the Bureau of Ethnology of the Smithsonian Institution."

WE regret to announce the death, at the age of seventy-one years, of Prof. J. W. Draper, of New York. We hope next week to give some account of his varied work in science. The death of Mr. Binney, of Manchester, is also announced, and of him also next week we shall give a brief memoir.

THE scientific circle in Dublin has sustained a great and a deeply felt loss by the sudden and premature death of Dr. Reuben J. Harvey. Reuben J. Harvey was born in 1845; he was the son of a well known physician in Cork, still living, and for many years one of the most distinguished professors in the Queen's College of that city. He entered Trinity College, Dublin, in 1863, obtaining a non-foundation scholarship in science in 1866; he graduated as a senior gold medallist (Mathematical Tripos) in 1867. Entering the medical school of the University of Dublin he obtained the first medical scholarship in 1868, and graduated as M.B. in 1870. He completed his studies in the schools of Vienna and Würzburg; at one time he was a demonstrator in anatomy in the Dublin University School; of late years he was Professor of Physiology in the Carmichael School of Medicine, and one of the physicians of the Cork Street Fever Hospital. In the pursuit of his professional duties he was taken ill of typhus fever on the 24th of December last, of which he died on the 28th of the same month. His sterling qualities

endeared him to a host of friends; his mathematical abilities were of no common order, he was a painstaking and enthusiastic worker in the school of modern physiology, but it is to be feared that the results of much of his labour will now never be known, for he was slow to publish, preferring to wait for a completer confirmation of his numerous observations. He was an extremely popular lecturer, and his sudden death has saddened many a heart.

MR. A. G. MORE, F.L.S., M.R.I.A., &c., has been appointed to the post of Curator of the Dublin Natural History Museum. Mr. More is known to botany as the author (with the late Dr. Moore) of the "Cybele Hibernica." During the past fifteen years he has been principal assistant under the late curator, Dr. Carte. The published works of Mr. More are a "Natural History of the Isle of Wight," a supplement to Dr. Bromfield's "Flora Vectensis," an essay on "The Distribution of British Birds during the Breeding Season," the "Cybele Hibernica" and its "appendix," and numerous detached papers on natural history.

WE are glad to learn from Dr. Lindemann, of the Geographische Gesellschaft in Bremen, that the brothers Krause were sent by the Society to explore the Behring Straits regions, *not* for commercial purposes. MM. Krause are naturalists, and have no other object than to make observations and collections in natural history and ethnology. Their reports on their studies on the Chukchi Peninsula, which will be published with charts and woodcuts in the next numbers of the *Journal* of the Bremen Society, will prove that their voyage was not at all unsuccessful. They are now on their way from San Francisco to Sitka, and intend to winter on a station of the North-West Trading Company.

M. A. HÜNTER, who has spent twenty years in the exploration of the flora and fauna of the Onega region, discusses (*Memoirs* of the St. Petersburg Society of Naturalists, vol. xi.) the interesting question as to the natural boundary between Finland and Northern Russia, which had already been raised by Wirtzen, Bonsdorf, Malmgren, and Nylander. M. Hünter arrives at the same conclusions as most of the above-named explorers, namely, that all the region west of Lake Onega to the Gulf of Bothnia, and as far as the White Sea to the north must be considered as a part of Finland, Lake Onega being a marked boundary between the two regions as to their geological structure, topographical features, fauna, and flora. The flora west of this lake is far richer than east of it, and does not contain plants which are common to the latter region and higher latitudes. The list of plants of the whole of the Onega region contains 578 Angiospermæ, 5 Gymnospermæ, and 36 Cryptogams.

MESSRS. TAYLOR AND FRANCIS have issued a useful Tide-Table for 1882, in the form of a large wall-card. The Table is compiled by Mr. E. Roberts, of the Nautical Almanac Office, and contains the time of high-water at London Bridge, and the depths on the silt of the Shadwell lower entrance of the London Docks, showing also in a conspicuous manner the possible overflows. The table is likely to prove useful to many people, and we trust Mr. Roberts will be encouraged to continue it yearly.

THE Geographical Society of Paris received, at its last meeting, a communication sent from Lieut. Rogozinsky, of the Russian Imperial Navy, who proposes to explore the region between the Congo, the southern borders of Adaman, and the Cameroon Mountains.

A SCIENTIFIC Commission has been appointed by the Préfet of the Seine to determine the measures which ought to be taken immediately for the protection of the public in theatres. All of them which will not comply immediately with the provisions of the law will be closed. Two of them have been already proclaimed so. A sharp discussion took place in the Municipal Council, and it was proposed by influential members that the electric incandescent light should be deemed obligatory for all the municipal theatres.

THE Council of the Meteorological Society have determined upon holding an Exhibition of Anemometers at the Institution of Civil Engineers, 25, Great George Street, on the evening of March 15 next. The Committee are anxious to obtain as large a collection as possible of various patterns of anemometers, either full size, models, photographs, or drawings. Special interest will attach to all apparatus bearing upon the history of anemometers and to their modification and improvement. The Committee will also be glad to show any new meteorological apparatus invented and first constructed since the last Exhibition.

THE French exploring party who went to Fouta Djalon in the Niger Country, has arrived in Paris with a deputation from the sovereign of that land who has entered into a treaty with them. This is an important step towards the opening of Timbuctoo to trading caravans.

WITH the January number of the London Missionary Society's *Chronicle* is issued a sketch-map of South-Eastern New Guinea, in which are included the discoveries recently made by their agents, Messrs. Chalmers, Macfarlane, and Beswick.

AT Leghorn an interesting geological discovery has been made. The brothers Orlando have found a well-preserved skeleton of an *Elephas antiquus*; it was lying at a depth of about 4 metres below sea-level. Prof. Meneghini, of Pisa, superintended the excavation, and announces that the tusks are pretty straight and have the enormous length of nearly 4 metres.

AT Nordrup, near Ringsted (Denmark), an interesting discovery has been made. At a depth of only a few feet in a deposit of pumice-stone the remains of seven human bodies were found, together with numerous bronze objects, urns, gold rings, Roman glasses, mosaics, glass beads, &c. A similar discovery was made at the same spot some years ago.

THE "Year-Book of Photography" for 1882, edited by Mr. Baden Pritchard, contains a great deal of information that must be useful to those interested in photography. It contains a fine portrait of the late Mungo Ponton. Piper and Carter are the publishers.

WE have received the first part of a new monthly German journal of science—*Humboldt*—devoted to natural science generally. The contents are very varied and the style on the whole popular, with many illustrations. There is a long list given of eminent contributors. Enke, of Stuttgart, is the publisher.

ON May 15 next an exhibition of minerals and objects illustrating ceramics and the manufacture of glass will be opened at Madrid.

A SPECIAL despatch has been received at St. Petersburg from M. Sullowsky, dated Irkutsk, December 26 (O.S.) 1881, which says: "At 10 o'clock on the morning of August 9 I parted with the *William Rodgers*, which shaped her course for Herald Island. The clipper *Strelok* then returned to the Chinese ports. Up to that time the *Strelok* and *William Rodgers* had kept company. They were joined in Providence Bay by an American schooner, having on board the captain of a whaler which had stranded. This captain narrated that he had seen a boat with dead men on board which had been driven upon Herald Island. The boat also contained, besides other articles, some silver spoons with the name *Jeannette* engraved on them. In consequence of this narrative the captain of the *William Rodgers* resolved to proceed to Herald Island with the view of wintering

there, and, with the aid of dogs purchased in Kamschatka, sending out his crew in small parties to the various sides of the island and its vicinity to search for the lost explorers."

THE Geographical Society have issued (through Stanford) the first part, of seven sheets, of the large-scale map of East Central Africa, by Mr. E. G. Ravenstein, which we have referred to as in preparation. The map is on the scale of fifteen miles to an inch, extends from 10° N. to 20° S. and lat. of 25°. It thus includes an extensive area of great interest, and is on a scale to show all the leading features in detail so far as they have been discovered. Mr. Ravenstein has collected in his map a vast amount of information which could be obtained only by consulting many books, so that it will form a library in itself. The routes of all explorers are shown, and abundant notes are laid down as to the nature of the country, ethnology, doubtful points, &c. It gives evidence of conscientious, painstaking, and wide research. To all interested in marking the progress of African exploration it will prove of great utility.

ADMIRAL MOUCHEZ will give his usual annual *soirée* at the Paris Observatory in March. He has distributed to the leading Parisian engineering firms the conditions for the construction of the cupola for the great equatorial to be built in the newly-annexed grounds. The diameter of the revolving cupola is to be 20 metres. The form must be hemispherical. The time required for rapid revolution is 10 minutes. It is to revolve in the same direction as the heavens, and the mechanism will cause the revolution of a seat for two astronomers. The dimensions of the moving platform are 1 metre by 2. The competitors are to employ either a falling weight or a gas engine as motor. In this case the motor must be placed at a distance outside.

THE French Government is busy preparing a large number of new bills which will be laid before both Houses when the Parliamentary recess is over. One of these relates to the the use of the surplus gained by the Electrical Exhibition and the other to the telegraphic network.

PROF. J. G. MCKENDRICK, the new Fullerian Professor of Physiology at the Royal Institute, will give the first of a course of eleven lectures on the Mechanism of the Senses on Tuesday next (January 17); Mr. H. N. Moseley will give the first of a course of four lectures on Corals on Thursday (January 19); and Prof. E. Pauer will give the first of a course of four lectures on Ludwig van Beethoven (with musical illustrations) on Saturday (January 21). The first Friday evening discourse will be given by Dr. Huggins, on Comets, on January 20.

TO the *British Trade Journal* for January, Dr. James Geikie contributes an interesting article on "The Gulf Stream and the Panama Canal," in which he concludes that the opening of the Canal "will have as much effect on the Gulf-Stream and the climate of Northern Europe as the emptying of a teapot-ful of boiling water into the Arctic Ocean would have in raising the annual temperature of Greenland."

AMONG the sixpenny popular editions issued by Messrs. Longman and Co. is an abridgement of the Rev. J. G. Wood's "Homes Without Hands," under the title of "Strange Dwellings; being a Description of the Habitation of Animals."

THE Austrian Minister for Public Instruction has ordered a colossal statue of the late Austrian Arctic explorer and discoverer of Franz-Josef Land, Carl Weyprecht. The statue will be executed by the celebrated sculptor, Victor Tilgner, of Vienna, in Laas marble.

M. PAUL BERT has filled an important lacuna in the organisation of the French system of public instruction in Algiers. He has authorised the École Supérieure of Letters in Algiers to grant honours in Arabic literature, after candidates have passed through a special examination.

RUSSIAN papers state that on December 22, 1881, at 11.20 p.m., a meteor, spreading an intense violet light and the fall of which was accompanied by a strong explosion, was seen at Byejetsk, in the government of Tver, and at the village Nasilovo, twenty-seven miles distant from that town.

THE detailed report of Prof. Sorokin to the Kazan University on the downs of Kara-koum in Russian Turkestan, has appeared in Russian as a separate volume, under the title of "Travel in Central Asia in 1878-79."

A SHOCK of earthquake was felt at Batoum (Caucasus) on December 28, 1881, at 6.33 p.m. It lasted for about ten seconds, and was accompanied by a loud underground noise.

EXPERIMENTS in the culture of the Chinese Soja bean (*Soja hispida*), which gave good results in Vienna when Prof. Haberlandt made use of seeds received from Northern China and Mongolia, have been repeated in Russia, and so far have been quite successful in Kieff, Saratoff, and the Crimea, but they have failed in the western provinces of Russia.

ON December 22, 1881, Tiflis was covered with a sheet of snow ten inches deep. Snow is a very rare occurrence in this town, and its appearance seems the more strange as there has been no snow in all Central Russia.

A VALUABLE discovery has been made in a quarry at Dillingen, near Saarlouis. Some workmen found in a small cavity a bronze vessel containing gold and silver ornaments of partly beautiful and partly very coarse workmanship. Amongst them is a golden disc of 8 centimetres in diameter richly covered with rubies, emeralds, and filigree work; also a silver object weighing over 150 grammes, and bearing inscriptions in Latin, Greek, and unknown characters. The proprietor of the quarry will present the objects found to the Bavarian National Museum.

NEAR Caltanisetta, Sicily, a series of caverns have been discovered, which are evidently burial-places dating from the period when the ancient Sicilians had already been ousted by the Italian tribes, but before the Greek colonisation had begun. Their arrangement is similar to the tombs at Pantelica, Acri, and Girgenti. In the neighbourhood of the caverns are numerous remains of ancient buildings and other proofs of the existence of an ancient populous colony. The spot derives its name from the hill of Gibil Gaib.

PHYLLOXERA seems to have abandoned the vineyards of Lombardy and Liguria, but has appeared in other parts of Italy, viz. Elba, Sardinia, &c. In Sicily the plague is making rapid progress; the districts of Messina and Caltanisetta being particularly unfortunate.

M. SYNGROS, the Athens banker who gave 100,000 francs for the erection of an archæological museum at Olympia, has again given a like sum to facilitate the progress of the work.

AN earthquake is reported from Honolulu on September 30, 1881. It consisted of one very violent and two lighter shocks. The first was felt at 4.53 a.m. lasting thirty seconds, and accompanied by loud subterranean rumbling; direction south-east to north-west. The crater of Kilauea was very active at the same time. Numerous houses were more or less injured. The phenomenon was also observed on all the other islands of the Hawaiian Archipelago. An earthquake is also reported from Eastern Galizia on December 29, 1881; several shocks lasting a few seconds. A sharp and unusually sustained shock of earthquake passed along the east coast of India on the morning of the 31st

ult. At Calcutta it lasted about two minutes. It was especially severe in Madras, where, judging from the space devoted to it by the local papers, it would appear to have caused much alarm. No damage is, however, reported.

THE English representative of the company which manufactures the Griscom motors, mentioned in our article last week, writes us to the effect that the small form of motor there described will attain a speed of 3000 revolutions per minute when worked with a 6-cell bichromate battery, and will accomplish 1000 foot-pounds of work per minute; and that with a dynamo-current this limit is far exceeded. We are also informed that the Company has established a branch in London for the direct supply of their motors to the public.

DR. WOEIKOFF asks us to correct an error in the abstract of his paper on the freezing on a salt lake (NATURE, vol. xxv. p. 206). It is there stated that "it was never observed before in laboratories that salt water was cooled below -4° without being frozen, and here we have salt water remaining unfrozen at -13° below zero." In the paper referred to Dr. Woeikoff simply stated that temperatures below -4° C. were not before observed in saline solutions outside of laboratories, while here we have temperatures of -13° observed in a salt lake.

THE additions to the Zoological Society's Gardens during the past week include a Crab-eating Raccoon (*Procyon cancrivorus*) from South America, presented by Mr. H. B. Whitmarsh; two Pileated Jays (*Cyanocorax pileatus*) from La Plata, presented by Mr. C. S. Barnes; two Lesser Black-backed Gulls (*Larus fuscus*), British, presented by Mrs. Brindley; a Speckled Terrapin (*Clemmys guttata*) from Massachusetts, three Confluent Rattlesnakes (*Crotalus confluentus*) from Dakota, U.S., presented by Mr. W. A. Forbes, F.Z.S.; a Blue-eyed Cockatoo (*Cacatua opthalmica*) from the Solomon Islands, a Short-eared Owl (*Asio brachyotus*), British, deposited; six Grey Squirrels (*Sciurus cinereus* var. *nigra*) from North America, purchased; a Gayal (*Bibos frontalis*), born in the Gardens.

THE SWISS SEISMOLOGICAL COMMISSION

THE Seismological Commission of Switzerland, after having published in French and German an excellent text-book on earthquakes, by Prof. A. Heim, and after having widely circulated its queries on earthquakes, has received a great mass of information which is mentioned in high terms both as to their accuracy and interest. Prof. A. Heim, availing himself of this material, has already published in the *Annuaire* of the Physical Observatory at Bern, an interesting monograph on the earthquakes of last year, and now M. Forel, of Morges, also publishes in the *Archives des Sciences Naturelles* of Geneva a first paper on earthquakes for the first thirteen months of the existence of the Commission from December, 1879, to January, 1881. We see, from a list of earthquakes during the years 1876 to 1880, which he publishes, that there were in Switzerland during this period of time, no less than forty-eight earthquakes, of which twenty-five were in 1880, the Commission having received accurate information on twenty-one of them, and four feeble shocks more having been reported in newspapers, but they still are rather doubtful. This increase of earthquakes in 1880 must, however, be to a certain degree the result of more accurate observation since the appointment of a special Commission for that purpose. The chief earthquakes during these thirteen months—December, 1879, to January, 1880—were the following:—On December 4 and 5, 1879, consisting of three main shocks and of seven feebler ones. The first and the third of the main shocks had each an extent of about 100 miles, and the aggregate area shaken by these earthquakes had a length of 250 miles and a width of 40 miles, its longer axis being parallel to the main chain of the Alps; the centres of the successive shocks advanced from south-west to north-east.

The earthquake of December 29 to 31, 1879, had a great extension. To use M. Forel's expression, "this beautiful earthquake" consisted of three chief shocks and of a dozen smaller ones. The first strong shock was experienced on an area limited by Lyons, Locle, Solothurn, Luzern, Sion, Chamonix, and Annecy, affording thus an ellipse 200 miles long and 100 miles wide, the great axis of which also was parallel to the main chain of the Alps. Its centre was between the Arve and Drarse Rivers, and its intensity at Geneva reached seven degrees of the decimal scale proposed by M. Forel. The shock propagated itself by several oscillations, at a speed of 300 to 400 metres per second. The following main shocks had a smaller area, but the centre did not advance along the axis of the shaken area; it remained in the neighbourhood of Geneva. It is rather remarkable that at the same moment as Savoy and Western Switzerland experienced this earthquake, another series of feeble shocks was felt at Niederaach in Thurgau, both earthquakes being separated by a zone 160 miles wide, where no shocks were observed.

The earthquake of July 3 to 5, 1880, extended throughout the whole of Switzerland, reaching also the southern parts of the Grand Duchy of Baden and Northern Piemont, and shaking an area 203 miles long and 187 miles wide. It was much complicated, two strong shocks having been felt almost in all Switzerland, whilst many other feebler shocks, about twenty in number, which preceded and followed the main ones, had a merely local extension. Prof. Heim shows that in this earthquake there was no central point from which the shocks might have been transmitted in all directions; and he thinks therefore that there was a general dislocation of strata on a very wide surface, rather than any shock departing from any determined point of the territory.

After further details, M. Forel tries to classify the earthquakes with relation to the seasons, and to the position of the moon; but we will not follow him in these researches, as he himself states that a thirteen months' period of observations is too short a time for such generalisations. But we may notice the circumstance that, whilst in some earthquakes the shock is propagated from a centre to the circumference, in others all the surface of the country seems to be pushed in one general direction; Prof. Heim discovers this character in the earthquakes of December 5, 1879, and of July 4, 1880. The importance of this remark will not escape the attention of those who are eagaged in the study of the formation of mountain ridges.

It is obvious that the Commission met with several difficulties in performing their task, and the chief are in the notation of the time of the earthquake and of its direction. Humanity seems to be, even in the fatherland of clockwork, very far from knowing the true time, and even the clocks of the towns, of the railway and telegraph stations, seem to leave very much to desire as to the accuracy of the information they give us. Some improvement, however, is shown in that direction during this last year, and it may happen that the desire of making accurate observations on earthquakes will give an impulse to some improvement in our knowledge of time. As to the direction of earthquakes, there are yet more difficulties, and M. Forel points out the interesting circumstance that nearly all information as to the direction of earthquakes is influenced by the orientation of streets, the direction of earthquakes nearly always being given either parallel or perpendicular to the observer's street. On some occasions, as in the earthquake of July 28, 1881, everything on the surface of the soil seems to be in a vibratory motion, as grains of sand on the surface of a vibrating slab, and the shocks are observed in all possible directions as well vertical as horizontal.

But it is not only from Switzerland that the Seismical Commission has received valuable information, and we find in the *Archives* two interesting papers on the earthquakes of the island of Chio, by M. Arland, and on those in Asia Minor, by M. van Lennep. As to the former, we notice that the volcanic eruptions on the island of Nisyros had ceased a month before the catastrophe, and that they have not begun again up to the present. The oscillations of April 3 seem to have had an amplitude of 15 degrees, and from April 3 to April 7, there were counted no less than 250 shocks, of which 30 to 40 were very strong. On April 11, at 7 p.m., there were the well-known great shocks which occasioned such a panic. They continued until the month of August, being followed by a standstill from August 1 to August 25. On this day and the following there were again strong shocks. From a complete list of houses destroyed, published by M. Arland, we see that there were no less than 6730, and that the number of killed and wounded was, in various villages, as much as 10 to 30, and even 36 per cent. of the population. M. Arland gives also some interesting notices as to the direction of the shocks in Calimassia, and to the disturbances they have done to the walls of the houses.